

MODULAR CURRENCY BIN ASSEMBLY

BACKGROUND OF THE INVENTION

The present invention relates to sorting and storage bins for currency and like documents.

Retail establishments, banks and other facilities engaging in business transactions must sort and store currency of various denominations and sometimes currency of several different countries. Retail institutions, banks, and other businesses, with currency processing activities must sort bills into individual denominations by various means. As a result, in many facilities there is a sorting and counting area where one or more persons are involved in the sorting, counting and storage of the currency until the processing involving a batch or batches of currency is completed. Generally, this process utilizes bins of sufficient number to accommodate the various types of currency and denominations as well as other media and supplies which may be involved. Generally, a processing station will have a fixed array of bins or storage compartments into which the operator places the bills after sorting and/or counting and bundling. As a result of the need to process various denominations and possibly the currencies of different countries, such installations tend to be large or insufficiently compartmented depending upon the volumes of currency being processed.

It is an object of the present invention to provide a novel modular currency bin which can be assembled into a group of such bins providing storage capacity for the number of different types and denominations of currency which are required to be processed at any given time.

It is also an object to provide such a novel modular currency bin which is simply and readily fabricated and easily assembled and configured to provide the desired number of storage compartments.

Another object is to provide such a modular currency bin which can be stacked vertically and/or horizontally utilizing the same components.

SUMMARY OF THE INVENTION

It has now been found that the foregoing and related objects may be readily attained in a modular currency bin which has a pair of spaced end walls, a rear wall extending therebetween, and at least one support wall extending between the end walls and abutting the rear wall. At least one divider wall extends vertically parallel to and intermediate the end walls to define a multiplicity of compartments. One of the end walls has a pair of outwardly angled flanges extending along its side margins and the other of the end walls has inwardly angled flanges extending along its side margins and defining a channel

therebetween configured and dimensioned to receive the outwardly extending flanges of another currency bin.

Preferably, each of the end walls is comprised of a generally planar panel and a flanged panel providing the angled flanges, and the panels are secured in assembly by securing means. The rear wall has slots therein in which are seated tabs on the divider wall(s).

The support wall has a slot(s) therein seating the divider wall(s), and it has flanges at its ends which are secured to the end walls by securing means.

Desirably, there is a second support wall, one of the support walls being adjacent the lower end of the end walls and the other of the support walls being spaced upwardly from the first wall and having slots therein seating the divider walls. Preferably, the support wall(s) is inclined downwardly towards the rear wall.

The preferred assembly includes an end cover member having outwardly extending flanges thereon seated in the channels of the inwardly extending flanges of one end wall and an end cover member having inwardly extending flanges thereon providing a channel therebetween seating the outwardly extending flanges on the other end wall. Two or more bins may be assembled in side-by-side relationship by interfitting the flanges on the end walls, and end covers are interfitted with the flanges on the

outer end walls of the outer bins. Two bins may be assembled in vertically stacked relationship, and the end cover members are assembled with the flanges thereon interfitting with the flanges of the end walls of both bins.

BRIEF DESCRIPTION OF THE DRAWINGS

Figure 1 is a perspective view of a single modular currency bin embodying the present invention;

Figure 2 is a top plan view thereof;

Figure 3 is a rear elevational view thereof;

Figure 4 is an exploded view thereof;

Figure 5 is a sectional view thereof along the line 5-5 of Figure 1;

Figure 6 is a fragmentary sectional view thereof along the line 6-6 of Figure 3;

Figure 7 is a fragmentary sectional view thereof along the line 7-7 of Figure 6;

Figure 8 is an illustration of two bins being assembled in side-by-side relationship;

Figure 9 is a front elevational view thereof with end covers being inserted;

Figure 10 is a perspective illustration of two bins being assembled in a vertical relationship; and

Figure 11 is a view of the bin assembly of Figure 10 with the end covers seated in the flanges of the end walls to secure the bins in assembly.

DETAILED DESCRIPTION OF THE ILLUSTRATED EMBODIMENT

Turning first to Figures 1-7, therein illustrated is a single modular bin embodying the present invention and generally designated by the numeral 10. A generally U-shaped body member provides a rear wall 12 and end walls 14, 16 extending perpendicularly thereto. Extending between the end walls 14, 16 adjacent the lower end thereof is a transverse support wall 18 and spaced upwardly therefrom is a second support wall 20; both of the walls 18, 20 are inclined downwardly towards the rear wall 12. Divider walls 22 extend vertically in parallel relationship between the end walls to define three currency receiving compartments.

Each of the end walls 14, 16 is comprised of a generally planar end wall member 24, 25 which is integrally formed with the rear wall 16 and a generally planar flanged end wall member 26, 27. The flanged end wall member 26 has outwardly angled flanges 28 extending along its front and rear side margins. The flanged end wall member 27 has inwardly angled flanges 30 along its front and rear side margins. Both flanged end wall members 26, 27 have laterally outwardly extending flange 70 as their lower ends. The upper ends of the planar end wall members 26,

27 have inturned flanges 32, 34, and the rear wall 16 also has an inward flange 36 along its upper end, and two pairs of aligned, vertically extending slots 38 spaced over the upper two-thirds thereof. Also provided in the rear wall 12 adjacent its upper end are a pair of keyhole openings 40 for securing the bin 10 to a wall or post (not shown).

The inner ends of the support walls 18, 20 have downturned flanges 42, 44, respectively, and downturned flanges 46, 48 extend along their outer ends. Downturned flanges 50, 52 are also provided along their sides. At the bottom end of the end walls 24, 25 and of the rear wall 12 are 66, 68 which seat the flanges 42, 50 of the support wall 18. The support wall 20 also has slots 54 extending inwardly from its rear edge.

The lower ends of the divider walls 22 seat in the slots 54 of the support walls 18, 20, and a pair of vertically spaced tabs 56 on the rear edges of the divider walls 22 seat in the slots 54 of the rear wall 16 and are bent over to secure the divider walls 22 thereto.

When a solitary bin 10 is to be used, end covers 58, 60 are utilized to close the channels between the flanges 28, 30. As seen in Figures 1 and 2, the end cover 58 has outwardly angled flanges 62 which interfit with the inwardly angled flanges 28 on the end wall 12, and the end cover 60 has inwardly angled flanges 64 which interfit with the outwardly angled flanges 30

on the end wall 14. As a result, the bin 10 has a finished appearance and there is a reduced likelihood of injury from a rough edge on the flanged end walls.

The end covers 58, 60 also have an inwardly oriented L-shaped flange 66 at the lower end thereof and a similarly oriented L-shaped flange 68 adjacent the center thereof. The flange 66 abuts the flange.

Turning next to Figures 8 and 9, therein illustrated is an assembly of two bins 10a, 10b. The outwardly angled flanges 30 on the end wall 16 are slid inwardly into the channel between the inwardly angled flanges 28 on the end wall 14 until the lower end thereof abuts the flange at the bottom of the end wall 14. This provides an array of six compartments. A third and even more bin units can be assembled side by side as desired. End covers 58, 60 are then slid over the flanges outer units.

Bin units may also be stacked as seen in Figures 10 and 11 wherein the bin unit 10d is mounted on top of bin unit 10c with the top flanges 32, 34, 36 on the end walls 14 and 16 and rear wall 12 of the lower unit 10c seating the bottom flanges 66, 68 of the upper unit 10d. To secure the bins 10c, 10d in assembly, end covers 58, 60 are inverted from the position seen in the preceding figures, and there are slid into place on the end walls 12, 14 until the flanges 68 seat on the bottom flanges 70 on the end walls 12, 14 as seen in Figure 11.

Also illustrated are positioning apertures 72 to facilitate the assembly of the components for welding or otherwise fastening.

It will be readily appreciated from the foregoing detailed description and the accompanying illustrations that the modular currency bins of the present invention enable facile assembly of two or more units horizontally or vertically or both. If the need for further storage compartments is recognized during the processing of a particularly large array of currency or other media, an additional unit(s) can be readily assembled to those already in place. Conversely, if the need for a large number of compartments should be obviated, units may be removed from the assembly. Moreover, because of the versatility of the arrangement, an assembly may be tailored to substantially fit the configuration of the room or an alcove in which the operator or operators are working.

The modular currency bins are easily fabricated from sheet metal by stamping and bending the individual components into the desired configurations, and the elements of a modular unit can easily be assembled by tack welding, riveting, adhesives, fasteners or any other suitable means. In some instances, tabs extend through slots in cooperating elements and are bent over to secure the components in assembly.

Although sheet metal is preferred for the modular currency bins of the present invention, it will be appreciated that the components can be readily fabricated from synthetic resin if so desired, and secured in assembly by sonic welding, adhesives or fasteners.

The end covers not only enhance the appearance of the installation and minimize the potential for possibly injury if the sheet metal flanges are nicked to provide a rough edge, but also provide means for securing vertically disposed units.

To enable the multiple function for the end covers, it can be seen that they have a laterally extending flange at one end thereof, and laterally extending flange intermediate the length thereof. For the function in which they finish the side of an assembly, the end flange is disposed downwardly and the end cover is slid fully into the channel until the end flange abuts the lateral flange at the lower end of the end wall member. When two units are assembled vertically, the end cover is inverted so that the flange at what had been the lower end is now disposed at the upper end. The end cover is then slid downwardly into the upper bin until the intermediate flange abuts the base flange on the upper unit, thus, placing the end cover in the position bridging the joint between the two bins and rigidifying the assembly. In such a vertical stack, it will be appreciated that the upper bin is also seating on the

horizontally inwardly projecting flanges at the upper end of the end walls.

Although the modular unit in the illustrated assembly is shown as having three compartments for the storage of three different denominations or types of currency in a single bin, obviously increasing the transverse dimension would allow the division of an individual unit into more storage compartments if so desired. However, the ease of assembling multiple storage bins obviates the need for larger bin units which would limit the versatility and ability to position the units in various locations. To secure a vertically stacked assembly in a firm position, fasteners can be inserted through the apertures in the rear wall and into a support structure such as the wall of a building, post, or the like.

The transverse storage area at the bottom of the individual units can be used for storing an additional denomination or type of currency, or for any other purpose, and the provision of the two transverse elements rigidifies the bins.

Thus, it can be seen from the foregoing detailed description and attached illustrations that the modular currency bins of the present invention are readily and easily fabricated and easily assembled in various configurations to meet the needs of a particular processor. Moreover, the units are relatively low cost and durable.